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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,970	12/21/2001	Dominic F. Canace	P25,380 USA	4568

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EXAMINER	
CALEY, MICHAEL H	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/036,970	CANACE ET AL.	
	Examiner	Art Unit	
	Michael H. Caley	2871	

-- The MAILING DATE of this communication appears on the cover she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 13-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 13-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20, 1-3, 5-11, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurashima et al. (U.S. Patent No. 5,596,665 "Kurashima").

Regarding claim 20, Kurashima discloses an optoelectronic module having:

a first part (Figure 2 element 7) defining at least one cavity for receiving an optical sub-assembly and a space a back portion to receive a circuit board;

at least one optical sub-assembly (OSA) (Figure 2 element 2) disposed in said cavity along said optical axis;

a circuit board (Figure 2 element 8) disposed in the space, the circuit board being substantially planar and parallel to the optical axis;

a flexible circuit (Figure 4 elements 810 and 811) connecting the OSA to the circuit board being electrically connected to the OSA and extending from the OSA orthogonally relative to the optical axis before bending backward to make an electrical connection with the circuit board on a planar surface of the circuit board; and

a second part (Figure 2 element 40) to mate with said first part and secure said OSA between the first and second parts such that the OSA is positioned in the optoelectric module to receive a connector.

Regarding claim 1, Kurashima discloses the first and second parts as mating to form a housing for the module (Figure 2 elements 28 and 40) and at least one of the first and second parts having a latch (Figure 2 element 28) and the other of the first and second parts having a shoulder (Figure 2 element 40) positioned to engage the latch when the first and second parts are mated to form the housing and hold the first and second parts together.

Regarding claim 2, Kurashima discloses the latch and the shoulder as able to be disengaged from each other after the first and second parts of the housing are mated (Figure 2 elements 28 and 40).

Regarding claim 3, Kurashima discloses the latch as having a resilient bar having first and second ends, the bar cantilevered from one part of the housing at the first end and having a dog at the second end adapted to engage the shoulder on the other part of the housing (Figure 2 element 78).

Regarding claim 5, Kurashima discloses the latch as accessible from external of the module so that it can be biased out of engagement with the shoulder without damaging the module (Figure 2 elements 28 and 40).

Regarding claim 6, Kurashima discloses the housing as comprising an outer surface (Figure 2 elements 28 and 40) and the second end of the latch as adjacent the outer surface of the

housing when assembled and able to be biased out of engagement with the mating shoulder manually.

Regarding claim 7, Kurashima discloses the housing as comprising slots through which fluid may enter and exit the module (Figure 2 element 4, Figure 19 element 30).

Regarding claim 8, Kurashima discloses electrical connectors as protruding from the module for electrically coupling the electronic circuitry to the external circuitry (Figure 1 element 43).

Regarding claim 9, Kurashima discloses the electronic circuitry as having a printed circuit board (Figure 2 element 8) and the electrical connectors as pins extending from the printed circuit board (Figure 1 element 43).

Regarding claim 10, Kurashima discloses a connector adapted to mate with the optical plug of an optical fiber (Figure 1 element 10).

Regarding claim 11, Kurashima discloses the connector as integral with the housing (Figure 2 element 7).

Regarding claim 19, Kurashima discloses mounting pins protruding from the housing for mounting the module to external circuitry (Figures 1 and 2 element 43).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurashima in view of DeAndrea et al. (U.S. Patent No. 5,708,743 "DeAndrea").

Kurashima discloses all of the proposed limitations except for a second subset of mating latches and shoulders in which the latch is on the second part and the shoulder is on the first part, opposite the arrangement of the first subset. DeAndrea teaches a similar arrangement in which a housing is constructed by means of an adjoining connector in which a latch (Figure 8 part 89) is formed on the part of the shoulder (Figure 8 element 84).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a secondary latch and shoulder in the opposite arrangement of the first subset. DeAndrea's connector for providing a housing for the coupler contains features additional to those disclosed by Kurashima for ensuring a proper alignment between the two parts and therefore efficient coupling to the optoelectronic device. DeAndrea defines a slot (Figure 8 element 89) to receive a latch (Figure 8 element 79) in addition to the latch and shoulder arrangement to construct a connector providing stablility in both horizontal and vertical directions. Changing the slot to a shoulder would have been an engineering expediency to create

even more stability than DeAndrea's connector. Such an improvement would have been motivated by a desire to lengthen the life of the connector by decreasing the amount of stress to each latch and shoulder in the event of tensioning stress. The improvement to Sampson's device would also provide a secondary latching mechanism in the case one or more of the latches may break or otherwise fail.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurashima in view of Chesavage (U.S. Patent No. 6,366,380).

Kurashima fails to disclose a device providing EMI protection. Chesavage, however, teaches a gasket providing EMI protection circumscribing the connector having fingers extending radially from the shell adapted to contact and protrude through a faceplate to provide EMI shielding (Figure 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided such an EMI gasket to the housing structure disclosed by Kurashima. It is old and well known in the art that EMI shielding is essential to maintain an efficient coupling in an optoelectronic connection device, especially when dealing with high transmission rates, such as GBIC. One would have been motivated to construct such a shielding mechanism in Kurashima's device in order to improve the bit error rate of transmission and enable the connector to operate efficiently in a high transmission rate application. Such an improvement would have been advantageous to reduce the interference between the electrical and optical components of the device. Additionally, it would have been advantageous to maintain the same

structure as taught by Chesavage to provide full shielding around the connector and a stable mechanical configuration within the housing.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurashima in view of Corradetti et al. (U.S. Patent No. 5,011,246 "Corradetti").

Kurashima discloses all of the proposed limitations except for a conductive shield to cover the electronic circuitry on the printed circuit board. Corradetti, however, teaches a shield (Figure 3 element 298) covering the printed circuit board of an optoelectronic device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have covered the printed circuit board in the module disclosed by Kurashima with a conductive shield. It is old and well known in the art that EMI shielding is essential to maintain an efficient coupling in an optoelectronic connection device, especially when dealing with high transmission rates, such as GBIC. One would have been motivated to construct such a shielding mechanism in Kurashima's device in order to improve the bit error rate of transmission and enable the connector to operate efficiently in a high transmission rate application. Such an improvement would have been advantageous to reduce the interference between the electrical and optical components of the device.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurashima in view of Corradetti and in further view of Burton et al. (U.S. Patent No. 4,911,519 "Burton").

Kurashima and Corradetti disclose all of the proposed limitations except for the shield as comprising two shields. Burton, however, teaches an EMI shield as constructed on the bottom surface of an optoelectronic module (Figure 3 element 74).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided two shields to provide EMI protection in the optoelectronic module. One would have been motivated to provide a top shield and bottom shield for the device as disclosed by Kurashima to provide protection between elements above and below the optoelectronic device and between the devices within the module. It would have been especially advantageous in Kurashima's design to have provided an EMI shield on the bottom surface to protect against interference between the internal and external circuit boards.

Response to Arguments

Applicant's arguments filed on 9/26/03 have been fully considered but they are not persuasive.

Applicant asserts that Kurashima fails to disclose a discrete flexible circuit and that consequently there is not an electrical connection between the flexible circuit and a planar surface of the circuit board.

Kurashima, however, discloses a discrete flexible circuit within a flexible portion of the circuit board (Figures 3 and 4 elements 46, 810, and 811). Such a flexible circuit is inherently necessary to electrically connect the OSA to the circuit board components, given the position of the flexible circuit board portion 46. The circuit follows the proposed path (Figures 3 and 4 element 46) and makes an electrical connection with the circuit board on a planar surface of the

circuit board evidenced by the presence of electrical chips having exposed wiring above the surface of the circuit board (Figure 3 element 801). Finally, the OSA is disclosed as able to move relative to the circuit board (Figure 3; Column 14 lines 24-27).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (703) 305-7913. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

mhc

T. Chowdhury
Primary Examiner